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An Analysis on Managerial Factors That Affect Farm Income in Lake County, South Dakota

Charles Hsi Chung Kao

AN ANALYSIS OF MANAGERIAL FACTORS THAT AFFECT FARM INCOME IN LAKE COUNTY, SOUTH DAKOTA

BY

CHARLES HSI CHUNG KAO

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This thesis is approved as a creditable, independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

_____
Thesis Adviser

_____
Head of the Major Department

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CHAPTER I

INTRODUCTION

The Problem

There is considerable difference in income among farmers. In Lake County, South Dakota, in 1959, 25 per cent of the farms sold products valued under $5,000, 45 per cent sold products valued between $5,000 to $9,999, and 30 per cent sold products valued over $10,000.[1]

It is generally assumed that the level of farm income is related to the degree of managerial success. Recent research suggests six managerial functions: problem recognition, observation, analysis, decision-making, action-taking, and responsibility acceptance.[2] Managerial success is a composite of successes in carrying out each of these six managerial steps. Questions then arise as to where failures occur in the decision-making process and why they occur. Locating and explaining the reasons for these failures may help increase the income of some farm operators.

Objectives

The general aim of this study was to analyze relationships between the performance of selected managerial functions and the level of farm

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[1]United States Bureau of Census, 1959 Census of Agriculture-Preliminary, Government Printing Office, Washington, D. C., 1960.

[2]J. E. Lee and B. D. Chastain, Problem Recognition in Agriculture, Bulletin 319, Agricultural Experiment Station, Alabama Polytechnic Institute, Auburn, Alabama, November, 1959, pp. 10-15.

income. Based on this analysis, recommendations were to be made for increasing farm income by improving the performance of managerial functions.

Hypotheses

The general hypothesis can be presented in mathematical form as follows:

$Y = F(X_1, X_2, X_3)$

Where Y: level of farm income

X_1: amount of managerial success as estimated by varying degrees of problem recognition.

X_2: amount of managerial success as estimated by amount of observation and analysis.

X_3: factors affecting the final decision: attitude toward efficiency, attitude toward the rate of adoption of new farming practices, and attitude toward the use of credit; also the availability of land for adjustment and the availability of capital for adjustment.

Specifically, three hypotheses can be derived from the above equation. They are:

1. There is a positive relationship between the degree of problem recognition and the level of income.

2. There is a positive relationship between the amount of managerial observation and analysis and the level of farm income. The amount of observation and analysis is measured by:

   a. Whether farm operators had contacts with the county agent, plus the degree of acquaintance with the county agent;

   b. Whether farm magazines were read;

c. Whether farm records were kept;

d. Whether farm records were studied;

e. Whether price outlook information was studied.

3. There is a positive relationship between factors that affect the final decision and the level of farm income. The following are assumed to be factors that affect the final decision:

a. Attitude toward efficiency;

b. Attitude toward the rate of adoption of new farming practices;

c. Attitude toward the use of credit;

d. Availability of land;

e. Availability of capital.

Procedure

Lake County, South Dakota, was selected as a sample area. It was selected because considerable difference of farm income and variation of farm enterprises existed in the county.[3]

One hundred twenty farm operators of 1,172 in this county, or approximately 10 per cent of the total, were drawn at random in each township. There are 16 townships in Lake County. In order to make the sample as representative of the county as possible, it was geographically stratified by township.

The data used in this study were mostly obtained from personal interviewing, in March, 1961.

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[3]See Chapter III for details regarding major enterprises in Lake County, and Chapter IV for details regarding the difference in farm income.

Information was obtained on farm income, farm operators' performance in problem recognition, observation, analysis, and factors which were assumed to affect the final decision.

Effort was then made to analyze the relationships between the carrying out of managerial functions and the level of farm income. Factors that were assumed to affect managerial functions were also analyzed. Only the first four of the six steps in managerial adjustment were taken into account because the other two were considered to be more difficult to study empirically.

The chi square test was generally used to ascertain if there are any significant relationships between the level of farm income and the performance of managerial functions. In some cases, this test could not be used because theoretical frequencies in individual cells should not be smaller than five.[4] The t test was also used.

Recommendations then were made suggesting how to improve the carrying out of specific managerial steps so as to increase income.

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[4]Frederick C. Mills, Statistical Methods, Henry Holt and Company, New York, 1955, p. 538.

CHAPTER II

FRAMEWORK FOR DECISION-MAKING

Johnson and Haver have indicated that a farm operator must perform the following five managerial functions:

1. observation;
2. analysis;
3. decision concerning the problems under consideration;
4. action-taking;
5. acceptance of economic responsibility.[5]

Until the work of Lee and Chastain, no major research efforts treated the importance of problem recognition as a definite step in managerial adjustment. This omission of problem recognition implies the assumption that the problem is given or well defined. But, as Lee and Chastain pointed out, "This assumption may not be valid insofar as farmers may encounter significant difficulty in recognizing problems or in expressing felt needs as problems. If problems are not given or if farmers fail to recognize their problems, analysis of alternative solutions or efforts at decision-making is premature."[6]

Therefore, they suggested six definite phases of managerial adjustment, consisting of the following:[7]

1. problem recognition;
2. observation;
3. analysis;

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[5]Glenn L. Johnson and C. B. Haver, Decision-Making Principles in Farm Management, Bulletin 593, Kentucky Agricultural Experiment Station, University of Kentucky, Lexington, Kentucky, January, 1953, p. 8.

[6]op. cit., p. 7.

[7]Ibid., pp. 10-15.

4. decision-making;
5. action-taking;
6. responsibility acceptance.

In the present study, problem recognition was treated as a definite step--the first step toward successful managerial decision-making. In other words, a successful farm operator must perform six functions instead of the generally accepted five functions.

The present study is limited in studying the first four functions. The meaning of these four functions and their relationships among them need further explanation.

Problem Recognition

Problem recognition is here defined as intellectualizing a felt difficulty. For instance, assume expenses are found to exceed income on a certain farm, and that the farmer feels financial difficulty. He thinks that something must be done to increase his income, so he begins to ask himself what should be done. In this simple case, this farmer recognizes his problem. This workable definition is consistent with John Dewey's idea: "The difficulty is getting located and defined; it is becoming a true problem, something intellectual, not just an annoyance at being held up in what we are doing."[8]

The importance of problem recognition has been clearly stated by Lee and Chastain. They wrote, "A clearly defined problem is one of the prerequisites for sound thinking. It is necessary before the problem-solving

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[8]John Dewey, How We Think, D. C. Heath and Company, Boston, 1933, pp. 108-109.

process can be successfully employed...problem recognition is the key to adjustment. It is a point from which to proceed, and a definite phase in the adjustment framework."[9]

Observation and Analysis

Observation refers to the gathering and noting of facts and information. Analysis refers to the evaluation of such information and recognition of alternative solutions.

It can be argued that observation and analysis go together. In the process of observation, analysis is consciously or unconsciously made. In this study, they were treated together.

Decision-Making

Decision-making means that the farm operator at this step arrives at a conclusion as to which alternative solution is most desirable in his situation. By now, the farm operator has decided what he is going to do.

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[9] Op. cit., p. 10.

CHAPTER III

THE SAMPLE AND THE AREA

Lake County was selected because considerable diversity in major enterprises existed in this county. It is useful to outline certain salient features of Lake County farmers as a whole and compare some of these with characteristics of the sample farmers.[10]

Location and Population

Lake County is situated between the James and Sioux Rivers in southeastern South Dakota. The average elevation of the county is about 1,700 feet and its topography varies from flat to slightly rolling.

It is one of the smallest counties in the state, ranking 55th among the 67 counties. It has been classified under Economic Area 4B. This southeastern area is characterized as the most intensive livestock feeding, hog, dairy, and poultry area of the state.[11] Farms producing livestock (other than dairy and poultry) are the most numerous in the area, followed by cash grain farms. Main crops are corn, oats, and

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[10]The information for describing the farmers' situation in Lake County is mostly from the following sources: Lake County Agriculture, South Dakota Crop and Livestock Reporting Service, Sioux Falls, South Dakota, nd; 1959 Census of Agriculture-Preliminary, United States Bureau of Census, Government Printing Office, Washington, D. C., 1960; and South Dakota Population 1950-1960: State and County Population Gains and Losses, South Dakota Agricultural Experiment Station, South Dakota State College, Brookings, South Dakota, October, 1960.

[11]C. R. Hoglund, Facts For Prospective Farmers and Ranchers in South Dakota, Circular 59, Agricultural Experiment Station, SDSC, Brookings, South Dakota, June, 1945, p. 9.

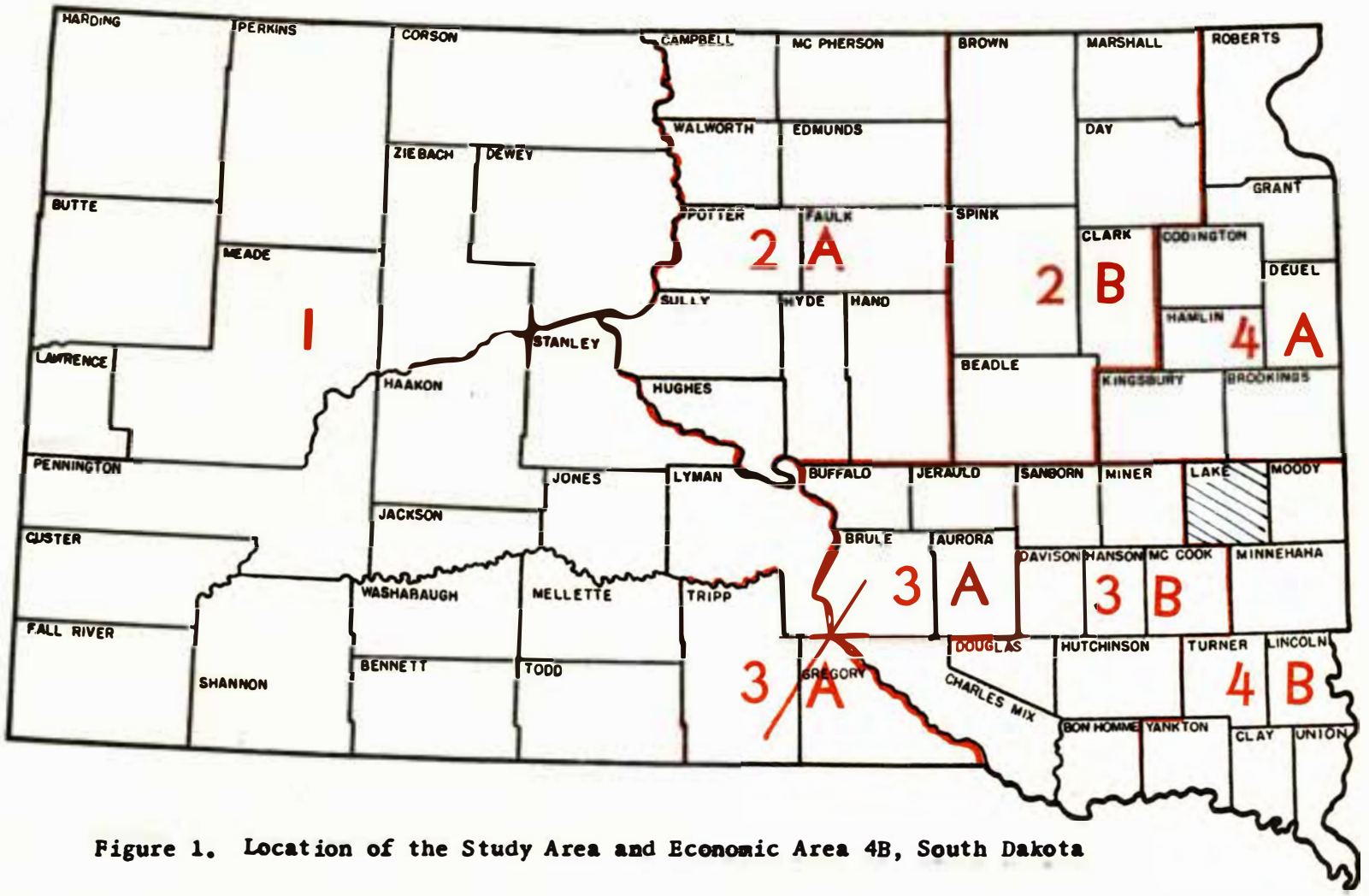

Figure 1. Location of the Study Area and Economic Area 4B, South Dakota

soybeans. Rainfall averages 24 to 26 inches annually.

The South Dakota map on page 9 shows Economic Area 4B and Lake County.

The 1960 United States Census credited Lake County with a population of 11,764 in 1960. Rural farm population was 4,600 in 1955. Slightly over a third of Lake County's population lives on farms.

Total Farm Land, Number of Farms, Average Farm Size and Tenancy

Lake County comprises 571 square miles or 365,440 acres. According to the 1959 Census of Agriculture, Lake County had 1,172 farms with 344,785 acres of land. This farm land makes up 94.3 per cent of all land in this county.

The average size of a farm in 1959 was 294 acres, 33 acres larger than in 1950. The average farm size in this county is small compared with the state as a whole. The average farm size in the state was 804 acres in 1959. But the average farm size is not small compared with Area 4B as a whole. The average farm size in Area 4B was 249 acres in 1959.

Tenancy hit a peak in 1940 when 61 per cent of the farms were tenant operated.[12] Sharp declines were noted in the 1945 and 1950 censuses followed by a more gradual decline in 1954 and 1959. In 1959, 37 per cent of tenancy was reported. Table I shows the tenure status of farmers in the sample compared with Lake County farmers as reported in the 1959 census.

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[12]Tenancy was defined to mean "rent only."

Table 1. Frequency and Percentage Distribution of Farm Operators as Shown by Census and Sample Data, by Tenure Status, Lake County, South Dakota, 1959, and March, 1961

Tenure status	Farm operators			
	Frequency		Percentage distribution	
	Census data[a]	Sample data[b]	Census data[a]	Sample data[b]
Rent only	439	35	37%	29%
Rent and own	344	44	30	37
Own only	389	41	33	34
Total	1,172	120	100%	100%

[a]1959
[b]March, 1961

Type of Farm

According to the 1959 Census of Agriculture, 62 per cent of the Lake County farms were classed as livestock farms.[13] The second largest class, with 18 per cent of the farms, was cash grain farms. The third largest class, with 14 per cent of the farms, was general farms where the value of products from one source or group of sources did not represent as much as 50 per cent of the total value of all farm products sold.

In the present study, the result was quite different. This may be due to the different definition. For instance, "livestock farm" in the present study is defined to include all farms where livestock provides the largest source of gross cash income to the farmer. This does not necessarily imply that livestock has to provide more than 50 per cent of the income. However, both the census and sample data showed that there existed

[13]Farms where 50 per cent or more of the value of all farm products sold was from cattle, calves, hogs, sheep, goats, wool and mohair provided the farm did not qualify as a dairy farm.

considerable diversity in major enterprises. Table 2 shows the differences.

Table 2. Frequency and Percentage Distribution of Farm Operators as Shown by Census and Sample Data, by Type of Farm, Lake County, South Dakota, 1959, and March, 1961

Type of farm	Farm operators			
	Frequency		Percentage distribution	
	Census data[a]	Sample data[b]	Census data[a]	Sample data[b]
Livestock	727	65	62%	54%
Cash grain	218	33	18	28
General	166	5	14	4
Dairy	55	17	5	14
Poultry	15	0	1	0
Total	1,181[c]	120	100%	100%

[a]1959

[b]March, 1961

[c]The data are estimates made for farms upon the basis of tabulation of data for a sample of approximately one-fifth of all farms. So the total farms were 1,181, nine more than the actual number.

Farm Operators' Age and Off-Farm Work

Census data showed that the average age of all farm operators in Lake County was 46.7 in 1954, compared with 47.2 in 1959. In the present study, sample farmers' average age was 47.8.

Census data showed that farmers over 65 comprised 10.6 per cent of the total in 1954, compared with 10.9 per cent in 1959. But in the present study only four out of 120 sample farmers, or 3.3 per cent, were over 65 years old.

The 1959 Census of Agriculture indicated that 354 out of 1,172 farmers or 22 per cent in Lake County worked off their farms in 1959. In the present study, it was found that exactly the same percentage worked off their farms in 1960. Their average off-farm income was $2,956.

CHAPTER IV

VARYING DEGREES OF PROBLEM RECOGNITION AND THEIR RELATION TO FARM INCOME

Farm Income

Definition

Farm income is generally defined as gross cash sales minus total cash operating expenses. This is often called net cash income.[14] In the present study, net cash income data for each individual farmer were obtained by asking, "What was your 1960 net income as reported on your income tax statement?"[15] Dependents' deductions were added to obtain an adjusted net cash income figure. This was done because most of the sample farm operators had already deducted allowances for dependents. Farm operators were also asked the gross value of products, number of dependents, and value of inventories. This provided additional income information.

The terms, farm income and adjusted net cash income, are used interchangeably in this study.

Classification

Sample farm operators in Lake County were originally classified in five income groups, as shown in Table 3.

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[14]John A. Hopkins and Earl O. Heady, Farm Records and Accounting, Iowa State College Press, Iowa, 1955, p. 165.

[15]This question was asked because "the greatest number of farmers pay income tax on net cash income," Ibid., p. 272.

Table 3. Frequency and Percentage Distribution of Farm Operators, by Level of Income, Lake County, South Dakota, March, 1961

Level of income	Frequency	Percentage distribution
$ 0-1,999	17	14%
2,000-3,999	43	36
4,000-5,999	41	34
6,000-7,999	11	9
8,000 and over	8	7
Total	120	100%

For more convenience of analysis, farmers were regrouped into two categories: one group with a yearly income of less than $4,000 in 1960, and the other with a yearly income of $4,000 and over in 1960. Sixty of the 120 farm operators fell into each group, as shown in Table 4.

Table 4. Frequency and Percentage Distribution of Farm Operators, by Level of Income, Lake County, South Dakota, March, 1961

Level of income	Frequency	Percentage distribution
$ 0-3,999	60	50%
4,000 and over	60	50
Total	120	100%

Classification of Problem Recognition

Problem recognition was defined in Chapter II as intellectualizing a felt difficulty. "Varying degrees of problem recognition" refers to variations in success in identifying and intellectualizing the "felt difficulty."

Three different levels of problem recognition were developed.

These were worked out on the basis of farm operators' responses to the following question:

> At present prices, are there some farming changes that might be investigated, to see if your farm income could be increased?
>
> 1. Yes ( )
> 2. No ( )
> 3. Does not know ( )

Following the definition of problem recognition given above, this question assumes that if a farm operator does not feel any difficulty and does not intellectualize the difficulty, his answer to this question will be either "no" or "does not know." If there is a "felt difficulty" and he intellectualizes the difficulty, then his answer will be "yes."

Nine indicators of farming success were used to assess the accuracy with which farm operators realized their problems. These indicators were: crop yield index, number of work units per worker, number of animal units per worker, number of animal units per 100 acres, crop machinery investment per crop acre, power machinery investment per crop acre, crop acres per worker, per cent lamb crop, and eggs per hen. They were computed for each farm operator to locate adjustment problems.

The application of the indicators in helping to determine the level of problem recognition can be illustrated by the following example. If a farmer answered "no" to the above question, and if indicators showed that his crop yield, or work units per worker, etc., were relatively low, this was assumed to mean that some maladjustments existed which he did not recognize. His level of problem recognition would be number one (lowest). In another case, if the respondent answered "no," and indicators actually showed a lack of significant need for adjustment, then his

level of problem recognition would be number three (highest). If his answer was "yes" to the above-mentioned question and he indicated certain changes which should be investigated, and these changes were consistent with those which the indicators would suggest, then his level of problem recognition would be number three. If the changes which he indicated were not complete according to the indicators of farming success, then his level of problem recognition would be number two (middle).

The 120 sample farmers were distributed among the three levels of problem recognition as shown in Table 5.

Table 5. Frequency and Percentage Distribution of Farm Operators, by Level of Problem Recognition, Lake County, South Dakota, March, 1961

Level of problem recognition	Frequency	Percentage distribution
Level 1 (lowest)	44	37%
Level 2 (middle)	63	52
Level 3 (highest)	13	11
Total	120	100%

The first or lowest level of problem recognition included 44 farmers, or 37 per cent. Farmers in this group generally did not know how to increase their income or did not believe that their income could be increased at present prices. But actually they needed significant changes on their farms.

The second or middle level of problem recognition included 63 farmers, or 52 per cent. Farmers in this group mentioned changes that might be investigated, but they were incomplete in terms of the indicators.

The third or highest level of problem recognition included 13 farmers, or 11 per cent. Farmers in this group generally indicated that at present prices certain changes should be made. These changes were consistent with those that were located by the indicators of farming success.

Relationship Between Problem Recognition and Farm Income

The major hypothesis states that there is a positive relationship between problem recognition and farm income. It means that the higher the ability of problem recognition, the higher the level of farm income.

Table 6. Frequency and Percentage Distribution of Farm Operators at Different Levels of Problem Recognition, by Level of Income, Lake County, South Dakota, March, 1961

Farm income	Level of problem recognition					
	Frequency			Percentage distribution		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
$ 0-3,999	29	26	5	66%	41%	38%
4,000 and over	15	37	8	34	59	62
Total	44	63	13	100%	100%	100%

By application of the chi square test, it was found that the level of problem recognition was significantly related to the level of farm income at the 95 per cent point.[16]

Sixty-six per cent of the respondents at problem recognition level one (lowest level) fell into the lower income group. Thirty-eight per cent of those at recognition level three (the highest level) fell into the lower income group.

[16]The computed chi squared value was 7.1. The tabular value was 5.991 at the 95 per cent point.

Relationships Between Selected Indicators of Farming Success and Farm Income

In Table 7, relationships between selected indicators of farming success and the level of farm income are examined.

Table 7. Productivity Indicators of Farm Operators at Two Different Income Levels, Lake County, South Dakota, March, 1961

Indicator of farming success	Lower income group ($3,999 and under)	Higher income group ($4,000 and over)
Average corn yield per acre (bushels)	53.5	57.5
Average number of work units per worker	87.5	115.6
Average number of animal units per worker	82.7	114.1
Average crop machinery investment per crop acre (dollars)	86.6	107.9
Average power machinery investment per crop acre (dollars)	96.9	98.4

All averages of indicators of success were higher in the higher income group than those figures in the lower income group.

The higher income group had the following characteristics:

1. Higher productivity of corn.
2. More work units (crop and livestock) per worker. This means that in the higher income group labor was used more efficiently than in the lower income group.
3. More livestock units per worker.
4. Higher average investment in crop machinery per crop acre.
5. Higher average investment in power machinery per crop acre.

It is concluded that indicators varied directly with farm income.

Relationships Between Problem Recognition and Characteristics of Farm Operators

It has already been found that farm income varied directly with problem recognition. However, what characteristics of sample farm operators vary with the level of problem recognition? Age, education, use of spare time, and number of years in farming were selected for analysis.

Age

The average age of the respondents at the lowest level of problem recognition was 52.2, ten years older than the average age of those at the highest level (level three). The average age of the respondents at problem recognition level two was 45.9 years, compared with 42.2 years for those at level three.

From Table 8, the null hypothesis, that there was no significant difference between the average age of farm operators at problem recognition level one and three, was tested at the .05 level of significance. The null hypothesis was rejected. Therefore, farm operators at the lowest level were significantly older than those at the highest level of problem recognition.

Table 8. Frequency and Percentage Distribution of Farm Operators and Average Age, by Level of Problem Recognition, Lake County, South Dakota, March, 1961

Level of problem recognition	Frequency	Percentage distribution	Average age
Level 1 (lowest)	44	37%	52.2
Level 2 (middle)	63	52	45.9
Level 3 (highest)	13	11	42.2
Total or average	120	100%	47.8

Another way of classification could also indicate the dominance of older farmers at problem recognition level one. Sixty-two per cent of the farmers at the lowest level were older than 50 years, compared with 23 per cent of those at the highest level. Clearly, younger farmers were dominant in the highest level of problem recognition groups.

Table 9. Frequency and Percentage Distribution of Farm Operators at Different Levels of Problem Recognition, by Age of Farm Operators, Lake County, South Dakota, March, 1961

Age of farm operators	Level of problem recognition					
	Frequency			Percentage distribution		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
50 and under	17	41	10	38%	65%	77%
51 and over	27	22	3	62	35	23
Total	44	63	13	100%	100%	100%

Both Table 8 and 9 indicated that older farm operators generally were at the lowest level of problem recognition.

Education

The average years of schooling in the lowest group were the lowest--9.5, compared with 10.2 years for those at the highest level of problem

recognition. The average years of schooling in the middle group was 9.9 years. The null hypothesis, that there was no significant difference between the average years of schooling of farm operators at the lowest and highest levels of problem recognition, was tested. The null hypothesis was accepted at the 0.05 level of significance.

Table 10. Frequency and Average Years of Schooling of Farm Operators, by Level of Problem Recognition, Lake County, South Dakota, March, 1961

Level of problem recognition	Frequency	Average years of schooling
Level 1 (lowest)	44	9.5
Level 2 (middle)	63	9.9
Level 3 (highest)	13	10.2
Average	--	9.8

Answers to the question, "What level of education is necessary for modern farming?", were quite different among the different levels of problem recognition. Only 25 per cent of the farmers of the lowest group thought college education was needed, compared with 54 per cent of the highest group. It seems reasonable to assume that those who received the most schooling believed that the more education was necessary.

Table 11. Frequency and Percentage Distribution of Farm Operators at Different Levels of Problem Recognition, by Level of Education Assumed Needed for Modern Farming, Lake County, South Dakota, March, 1961

Level of education needed for modern farming	Level of problem recognition					
	Frequency			Percentage distribution		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Primary	1	2	0	2%	3%	0%
High and vocational	30	35	6	68	56	46
College	11	24	7	25	38	54
No difference	2	2	0	5	3	0
Total	44	63	13	100%	100%	100%

Use of Spare Time

Sixty-two per cent in the highest level problem recognition group reported spending their spare time in activities relating to the increase of their efficiency, compared with 30 per cent in the lowest group and 49 per cent in the middle group. Relatively few of the farmers in the lowest group spent time in reading farmers' magazines, watching farmers' TV shows, and attending farmers' meetings. This may imply that farm magazines, farmers' TV shows, and farmers' meetings provide certain information for certain farm problems, thus influencing farm operators' problem recognition ability.

Table 12. Frequency and Percentage Distribution of Farm Operators at Different Levels of Problem Recognition, by Ways of Using Spare Time, Lake County, South Dakota, March, 1961

Ways of using spare time	Level of problem recognition: Frequency			Percentage distribution		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Reading farm magazines, watching farmers' TV shows, and attending farmers' meetings	13	31	8	30%	49%	62%
Resting	13	8	1	30	13	8
Other	18	24	4	40	38	30
Total	44	63	13	100%	100%	100%

Number of Years in Farming

Average years in farming for the farm operators at the lowest level of problem recognition were 16.7, the longest among these three groups. This is understandable because many older farm operators (see Table 9) were included. Average years in farming at the highest level were 12.7, the shortest among these three groups.

The null hypothesis, that there was no significant difference between the number of years in farming at the lowest and highest levels of problem recognition, was tested. The null hypothesis was accepted at the .05 level of significance, but rejected at the .10 level of significance.

Other data showed that 20 per cent of farm operators at the lowest level reported expecting to retire soon, compared with 3 per cent at the middle level and none at the highest level. It may be that when the goal of retirement in the near future is taken into consideration, the response that "there is nothing that can be done to increase the farm income" is the most appropriate response. Improvements that would eventually raise

farm income might not do so within the short period of time left before retirement.

Table 13. Farm Operators' Average Years in Farming, by Level of Problem Recognition, Lake County, South Dakota, March, 1961

Level of problem recognition	Average years in farming
Level 1 (lowest)	16.7
Level 2 (middle)	13.5
Level 3 (highest)	12.7

In this chapter, it was found that the level of farm income was significantly related to the level of problem recognition at the 95 per cent point. It was also found that the level of problem recognition was significantly associated with farm operators' age and number of years in farming at the 95 per cent and 90 per cent levels of significance, respectively. Older farm operators tended to be at the lowest level of problem recognition. However, when the goal of retirement is taken into account, some older farm operators' response that "nothing can be done" is perhaps the most appropriate response.

CHAPTER V

MANAGERIAL OBSERVATION AND ANALYSIS AND THEIR RELATION TO FARM INCOME

By definition, once a clear understanding of the problem has been established, observation and analysis would ensue. This suggests that before a farm operator makes the final decision, the functions of problem recognition, observation, and analysis should be performed. If a farm operator fails to perform the functions properly, his final decision will be affected and his income will often be lower than otherwise.

Major sources of information for farm operators today include county agents, farm magazines, and farm records. Using information from these sources, farmers may be able to make a proper decision. In this study, contacts and degree of acquaintance with the county agent, frequency of reading farm magazines, keeping farm records, analyzing farm records, and studying price outlook information are assumed to be indicators of the amount of observation and analysis.

Contacts and Degree of Acquaintance with County Agent

The farm operators' answers in response to a series of questions regarding contacts and the degree of acquaintance with the county agent are shown in Table 14. These questions are:

1. In 1960, did you read any newspaper articles, bulletins, or letters from your county agent or listen to him on the radio or TV?
2. Do you know the name of the county agent?
3. Do you know him personally?
4. In 1960, did you have any personal contact, at meetings or visits or through phone calls, with your county agent?

Table 14. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Contacts and Degree of Acquaintance with County Agent, Lake County, South Dakota, March, 1961

Contacts and degree of acquaintance with county agent	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
No "yes" answers	13	6	19	22%	10%	16%
One to three "yes" answers	35	32	67	58	53	56
Four "yes" answers	12	22	34	20	37	28
Total	60	60	120	100%	100%	100%

In the lower income group, 22 per cent had no contact with the county agent, compared with 10 per cent in the higher income group. Perhaps, so far as the 10 per cent of the higher income group were concerned, they did not have to rely on help from the county agent as urgently as did the lower income farmers. Thirty-seven per cent of the higher income group gave four "yes" answers, while 20 per cent of the lower income farmers fell into the same category.

The null hypothesis was tested that there was no significant relationship between the level of farm income and contacts and the degree of acquaintance with the county agent at the 90 per cent point.[17] The null hypothesis was rejected. The fact may indicate that contact with the county agent would help farm operators observe and analyze their problems.

[17]The computed chi square test value was 5.59. The tabular value was 5.991 at the 95 per cent point, and 4.605 at the 90 per cent point.

Frequency of Reading Farm Magazines

"Farm papers and magazines are the most important source of economic information of (sic) farmers. More farmers use them than use any other source."[18] This implies that farm magazines may provide the farm operators some information relative to their problems, and help farm operators make a better decision.

The percentage of farm operators that reported reading farm magazines regularly was 68 per cent in the higher income group, compared with 50 per cent in the lower income group. The percentage reading farm magazines irregularly was 50 per cent in the lower income group, compared with 32 per cent in the higher income group.

Table 15. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Frequency of Reading Farm Magazines, Lake County, South Dakota, March, 1961

Frequency of reading farm magazines	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Sometimes	30	19	49	50%	32%	41%
Regularly	30	41	71	50	68	59
Total	60	60	120	100%	100%	100%

The chi square test showed that there was a significant relationship between the level of farm income and the frequency of reading farm

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[18] M. G. Smith, F. B. McCormick, and R. S. Dougan, Economic Information: Sources, Use, and Effectiveness in Farm Production Adjustment, Bulletin 828, Ohio Agricultural Experiment Station, Wooster, Ohio, March, 1959, p. 3.

magazines at the 95 per cent point.[19]

Keeping Farm Records

There was not much difference between the lower and higher income groups in keeping farm records. Eighty-eight per cent of the higher income farm operators reported keeping farm records, compared with 80 per cent of the lower income farm operators. This relatively high percentage in both categories may be due to the fact that farm records were kept mainly for convenience in filling out income tax statements.

Table 16. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Whether Farm Records Are Kept, Lake County, South Dakota, March, 1961

	Farm operators					
	Frequency			Percentage distribution		
Do you keep farm records?	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Yes	48	53	101	80%	88%	84%
No	12	7	19	20	12	16
Total	60	60	120	100%	100%	100%

Studying Farm Records

One hundred one farm operators out of 120, or 84 per cent of all farm operators, reported keeping farm records. However, only 68 out of the 101, or 67 per cent of 101 farm operators, studied farm records for the purpose of increasing their income. Seventy-six per cent of the

[19]The computed chi square test value was 4.18. The tabular value was 3.841 at the 95 per cent point.

higher income farm operators reported studying farm records, compared with 57 per cent of the lower income farm operators.

Table 17. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Studying Farm Records, Lake County, South Dakota, March, 1961

	Farm operators					
	Frequency			Percentage distribution		
Studying farm records	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Yes	28	40	68	57%	76%	67%
No	21	12	33	43	24	33
Total	49	52	101	100%	100%	100%

The chi square test showed that there was a significant relationship between the level of farm income and studying farm records at the 95 per cent point.[20] This implies that those who perform the functions of observation and analysis by studying farm records generally have higher income than those who do not.

Studying Price Information

Most farm operators in both income groups reported studying price information. Percentages in studying price information were 88 per cent in the higher income group and 80 per cent in the lower income group.

[20] The computed chi square test value was 4.50. The tabular value was 3.841 at the 95 per cent point.

Table 18. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Studying Price Outlook Information, Lake County, South Dakota, March, 1961

Studying price outlook information	Farm operators: Frequency $3,999 and under	$4,000 and over	Total	Percentage distribution $3,999 and under	$4,000 and over	Total
Yes	48	53	101	80%	88%	84%
No	12	7	19	20	12	16
Total	60	60	120	100%	100%	100%

The chi square test showed that there was no significant relationship between studying price information and the level of farm income at the 95 or 90 per cent point. This, of course, does not mean that studying price information is not important. But it may imply that since most farm operators in both groups studied price information, this was not a factor that contributed to their variation in income. Such evidence may suggest that it is more important to notice how they studied rather than whether they studied. It may also be that price outlook information is generally short run in nature so it does not help farm operators very much in making their adjustment. Such an interpretation is supported by the Economic Information Study conducted by the Ohio Agricultural Experiment Station. It was pointed out that "price information of the type received by farmers does not seem effective in helping farmers adjust business size.... Quite likely there is much value in collecting and disseminating such information but it is doubtful if much of this value lies in helping farmers make adjustments in their size of enterprise."[21]

[21] M. G. Smith, op. cit., p. 5.

CHAPTER VI

FACTORS AFFECTING THE FINAL DECISION AND THEIR RELATION TO FARM INCOME

In the present study, it is assumed that five major factors--attitude toward efficiency, attitude toward the rate of adoption of new farming practices, attitude toward the use of credit, availability of land for adjustment, and availability of capital for adjustment--affect farm operators' final decisions. The importance of the individual's attitude toward adjustment was emphasized by a recent study in South Carolina: "A critical factor in obtaining desirable adjustments in agriculture is the farm operator's individual attitude toward making the adjustment. Although an individual farmer's attitude is the consequence of many things, it is, nevertheless, vital in determining his action."[22]

In addition, when a farm operator makes a decision regarding his farm adjustment, it may require the outlay of additional capital or expansion of the size of farm or both. So the availability of land and capital for adjustment may affect the final decision.

Definition of Attitude

An attitude shows "how people feel toward things, whether they are

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[22]C. C. Taylor and T. A. Burch, Personal and Environmental Obstacles To Production Adjustments on South Carolina Piedmont Area Farms, South Carolina Agricultural Experiment Station, Bulletin 466, December, 1958, p. 23.

for or against certain questions,... or problems.[23] It is a predisposition to action; it is a criterion which predetermines the direction of the individual's behavior.

Attitude Toward Efficiency

Farm operators were asked the following two questions in order to ascertain the relative importance they attach to efficiency. The supposed attitudes are shown in the parentheses following the answers.

1. In being a successful farmer, what is most important?

   _____ Keeping records (efficiency and practicality)
   _____ Working hard (hard work)
   _____ Weighing each farm practice against the profit that it gives you (efficiency and practicality)
   _____ Staying with practices you have always used (traditionalism)

2. The most important thing to help farming in the United States is:

   _____ to keep the family size farm (farming as a way of life)
   _____ to move toward the big commercial farm (efficiency)
   _____ to keep farming as a way of life (farming as a way of life)
   _____ to make each farm as efficient as possible (efficiency)

In the realm of value systems, "working hard" is defined as "the conviction that the individual is the master of his destiny through quantity of work performed and the practice of frugality."[24] "Efficiency and practicality" means "selection of courses of action in terms of the least waste of time and effort."[25]

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[23]Lincoln D. Kelsey, Cannon C. Hearne, Cooperative Extension Work, Comstock Publishing Associates, Ithaca, New York, 1955, p. 222.

[24]Lowry Nelson, et al., Community Structure and Change, The Macmillan Company, New York, N. Y., 1960, p. 112.

[25]Ibid., p. 111.

Table 19. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Attitude Toward How to Be a Successful Farmer, Lake County, South Dakota, March, 1961

In being a successful farmer, what is most important?	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Efficiency and practicality	34	50	84	57%	83%	70%
Hard work	24	7	29	37	12	24
Traditionalism	4	3	7	6	5	6
Total	60	60	120	100%	100%	100%

As seen in Table 19, 83 per cent of the higher income farmers thought that efficiency was most important if one were to be a successful farmer, compared with 57 per cent of the lower income group. Only 12 per cent of the higher income group believed that working hard was the most important thing, but 37 per cent of the lower income group had the same attitude.

The chi square test showed that there was a significant relationship at the 95 per cent point between farm income and the attitudes toward how to be a successful farmer.[26] Farm operators who valued efficiency as the most important way to be a successful farmer generally received the higher income.

Farm operators' response to the second question is shown in Table 20.

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[26]The computed chi square test value was 8.21. The tabular value was 5.991 at the 95 per cent point.

Table 20. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Attitude Toward How to Alleviate United States Farm Problems, Lake County, South Dakota, March, 1961

The most important way to alleviate farm problems in the United States	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Keep farming as a way of life	47	36	83	78%	60%	69%
Emphasize efficiency	13	24	37	22	40	31
Total	60	60	120	100%	100%	100%

The majority of farm operators in both groups thought that to keep farming as a way of life was the most important way to alleviate farm problems in the United States. However, 40 per cent of the higher income farm operators thought that efficiency was the most important way, compared with 22 per cent of the lower income group.

The chi square test showed that there was a significant relationship at the 95 per cent point between the level of farm income and the attitude toward how to alleviate United States farm problems.[27]

The results of Table 19 and 20 imply that the attitude toward efficiency was significantly associated with the level of farm income.

Attitude Toward the Rate of Adoption of New Farming Practices

Farm operators today need to make adjustments because of the constant changes in agriculture and the general economic environment. Also,

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[27]The computed chi square value was 4.71. The tabular value was 3.841 at the 95 per cent point.

early adoption of sound, new farming practices seems necessary. "For the early adopter will profit by lower costs before prices are lowered. Those who fail to adopt the practices will lose through continued high costs and lowered prices."[28] This hypothesis is supported by the data in Table 21.

Forty-five per cent of those in the higher income group said that it is most important to be the first to change if the new practice is sound, compared with 23 per cent of the lower income group. In the lower income group, 37 per cent said that it is most important to change as soon as most of their neighbors have changed, compared with 17 per cent of the higher income group.

Table 21. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Attitude Toward When to Adopt New Farming Practices, Lake County, South Dakota, March, 1961

In deciding whether to adopt new farming practices, it is most important:	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
To be the first if it is a good practice	14	27	41	23%	45%	34%
To be the last to change	0	2	2	0	3	2
To change as soon as most of your neighbors have changed	22	10	32	37	17	27
To change if your neighbors say it is a good practice	24	21	45	40	35	37
Total	60	60	120	100%	100%	100%

[28] Rex D. Helfinstine, "Ways to Increase Farm Income," South Dakota Farm and Home Research, Vol. XII, Agricultural Experiment Station, South Dakota State College, Spring, 1961, p. 4.

The relationship between the level of income and the attitude toward adopting new farming practices was further analyzed by asking, "About where would you rate yourself in respect to adopting new farm practices?"

Table 22. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Their Reported Speed of Adopting New Farming Practices, Lake County, South Dakota, March, 1961

Reported speed of adopting new farming practices	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Faster than average	8	14	22	13%	23%	18%
Average	31	36	67	52	60	56
Slower than average	21	10	31	35	17	26
Total	60	60	120	100%	100%	100%

In the higher income group, only 17 per cent said that they were slower than the average in adopting new farming practices, compared with 35 per cent of the lower income group. Twenty-three per cent of the higher income group said that they were faster than average, compared with 13 per cent of the lower income group.

The null hypothesis was tested that there was no significant relationship between the reported speed of adopting new farming practices and the level of farm income at the 90 per cent point.[29] The null hypothesis was rejected. Those who reported adopting new farming practices earlier had higher incomes than those who adopted later. This evidence further supported the theory.

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[29]The computed chi square value was 5.07. The tabular value was 4.605 at the 90 per cent point, and 5.991 at the 95 per cent point.

Attitude Toward the Use of Credit

Most respondents said they were willing to use credit.

Table 23. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Attitude Toward the Use of Credit, Lake County, South Dakota, March, 1961

Should farmers borrow money for productive purposes?	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Strictly against credit	2	2	4	3%	3%	3%
Moderate use of credit	31	22	53	52	37	44
Use credit wherever it will pay	25	36	61	42	60	51
Do not know	2	0	2	3	0	2
Total	60	60	120	100%	100%	100%

The null hypothesis, that there was no significant difference between the percentage of farm operators preferring "moderate use of credit" and the percentage preferring to "use credit wherever it will pay" at each income level at the 95 per cent level, was tested. The null hypothesis was accepted.

The Availability of Land for Adjustment

To the farm operator, land is livelihood. His income is directly derived from the land. The average size of farm in Lake County was 261.1 acres in 1950, and 294.2 acres in 1959. Then the questions arise: Does the size of farm vary with income? Will farm operators be better off if they have more land? is the availability of land a factor which affects farm operators' adjustments?

A significant relationship was found between the level of farm income and the size of farm at the 95 per cent point.[30]

Table 24. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Size of Farm, Lake County, South Dakota, March, 1961

Size of farm (acres)	Farm operators: Frequency $3,999 and under	Frequency $4,000 and over	Frequency Total	Percentage distribution $3,999 and under	Percentage distribution $4,000 and over	Percentage distribution Total
159 and under	21	8	29	35%	13%	24%
160-319	31	35	66	52	58	55
320 and over	8	17	25	13	29	21
Total	60	60	120	100%	100%	100%

Farm operators were asked, "Would you be able to make a better living for your family if you had more land?" Forty per cent of the higher income group and 35 per cent of the lower income group responded that they would be better off if more land were available. Thus, 37.5 per cent of all farm operators indicated that they felt a shortage of land.

Table 25. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Answers to the Question, "Could You Make a Better Living If More Land Were Available?" Lake County, South Dakota, March, 1961

Could you make a better living if more land were available?	Farm operators: Frequency $3,999 and under	Frequency $4,000 and over	Frequency Total	Percentage distribution $3,999 and under	Percentage distribution $4,000 and over	Percentage distribution Total
Yes	21	24	45	35%	40%	38%
No	39	36	75	65	60	62
Total	60	60	120	100%	100%	100%

[30]The computed chi square value was 9.47. The tabular value was 5.991 at the 95 per cent point.

The importance of land needed for expansion for farm operators can also be visualized by asking, "Could you farm more land with the machinery and equipment you now have?"

Table 26. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Answers to the Question, "Could You Farm More Land with the Present Equipment?", Lake County, South Dakota, March, 1961

Could you farm more land with the present equipment?	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Yes	35	40	75	58%	67%	62%
No	25	20	45	42	33	38
Total	60	60	120	100%	100%	100%

Fifty-eight per cent of the lower income group and 67 per cent of the higher income group responded that they could farm more land with their present equipment. This suggests that there were idle machinery and land shortage in both groups.

Finally the crucial question arises. Is more land available for adjustment? The farm operators' response is shown in Table 27.

Table 27. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by the Availability of Land for Adjustment, Lake County, South Dakota, March, 1961

Is more land available for adjustment?	Frequency	Percentage distribution
Yes	28	23%
No	90	75
Does not know	2	2
Total	120	100%

Only 23 per cent of all farm operators responded positively. Such evidence revealed that the unavailability of land for adjustment was a limiting factor for most farm operators.

Availability of Capital for Adjustment

In this study, 63 per cent of all farm operators said that they borrowed money in 1960. Approximately the same percentages of farm operators at both levels of income reported borrowing money in the previous year. This was compatible with their expressed attitude toward the use of credit (see Table 23).

Table 28. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Whether They Reported Borrowing Money Last Year, Lake County, South Dakota, March, 1961

Did you borrow money last year?	Farm operators					
	Frequency			Percentage distribution		
	$3,999 and under	$4,000 and over	Total	$3,999 and under	$4,000 and over	Total
Yes	37	39	76	62%	65%	63%
No	23	21	44	38	35	37
Total	60	60	120	100%	100%	100%

Among those who reported borrowing money, most of them in both groups reported using the money for current operating purposes, such as fertilizer, feed, seed, etc.

Table 29. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Type of Credit Used, Lake County, South Dakota, March, 1961

Type of credit used	Farm operators: Frequency $3,999 and under	$4,000 and over	Total	Percentage distribution $3,999 and under	$4,000 and over	Total
Operating	27	29	56	73%	74%	74%
Intermediate	3	0	3	8	0	4
Long-term	5	1	6	14	3	8
Mixed	2	9	11	5	23	14
Total	37	39	76	100%	100%	100%

Among the 76 farm operators who reported borrowing money last year, only nine responded that they could have used more credit if it had been available. Seven out of the nine were lower income farm operators.

Table 30. Frequency and Percentage Distribution of Farm Operators at Two Different Levels of Income, by Whether They Reported They Could Have Used More Credit if It Were Available, Lake County, South Dakota, March, 1961

Could you have used more credit if it had been available to you?	Farm operators: Frequency $3,999 and under	$4,000 and over	Total	Percentage distribution $3,999 and under	$4,000 and over	Total
Yes	7	2	9	18%	5%	12%
No	30	37	67	82	95	88
Total	37	39	76	100%	100%	100%

It should not be overlooked that 44 (37 per cent) of the 120 farm operators reported that they borrowed no money at all in 1960. They were not asked to explain why they did not borrow. Some or all of them may have felt internal financing provided all the capital they needed. On

the other hand, some may have desired to borrow but found that credit could not be extended to them. Therefore, the unavailability of credit may be more of impediment to adjustment than is suggested by the data that were obtained. Except for this possibility, the unavailability of credit does not appear to have been a serious impediment to adjustment in 1960.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Until the work of Lee and Chastain, no major research efforts treated problem recognition as a definite step in the decision-making framework. Problem recognition in this study was treated explicitly as a step in the decision-making process. The managerial decision-making process then refers to problem recognition, observation, analysis, decision-making, action-taking, and responsibility acceptance. To analyze the relationships between the level of farm income and the first four functions was the major subject of this study.

It was found that farm operators at the lowest level of problem recognition received significantly less income than those at the highest level of problem recognition. Sixty-six per cent of the respondents at problem recognition level one (lowest level) fell into the lower income group. Thirty-eight per cent of those at problem recognition level three fell into the lower income group.

Further, it was found that the level of problem recognition was significantly associated with farm operators' age at the 95 per cent level of significance. Older farm operators tended to be at the lowest level of problem recognition. However, when the goal of retirement is taken into consideration, some older farm operators' response that "nothing can be done" is perhaps the most appropriate response. However, it is probably true that problem recognition is more difficult on the average for older farm operators. This does not necessarily imply that degrees of

problem recognition are related to age as such. Lack of problem recognition among older farm operators today may be due more to the experience of these farm operators in the 1920's and 1930's than to age itself. If this is true, then the farm operators who are in the older age category ten years from now may not be the least successful in recognizing problems.

No significant relationship was found between the level of farm income and years of formal education. This may not necessarily mean that increasing the years of formal education will not improve the ability to recognize problems. The difference in formal education between farmers at the highest level of income and those at the lower level was very slight. A considerable increase in years of formal schooling might contribute to more success in recognizing problems.

The data provided some evidence that some observation and analysis precede problem recognition. Thirty per cent of the farm operators at the lowest level of problem recognition reported spending their spare time in reading farm magazines, watching farmers' TV shows, and attending farmers' meetings, compared with 62 per cent of those at the highest level. At least there is the suggestion that farm operators who fail to recognize their problems also do less observing and analyzing. This assumes that the statements of respondents with regard to reading farm magazines, watching farmers' TV shows, and attending farmers' meetings are valid indicators of the degree of observation and analysis.

The amount of managerial observation and analysis performed by farm operators was further measured by the number of contacts and degree of acquaintance with the county agent, frequency of reading farm magazines,

keeping farm records, studying farm records, and studying price outlook information.

A significant relationship was found between the level of farm income and the number of contacts and degree of acquaintance with the county agent. Twenty-two per cent of the lower income farm operators reported no contacts or acquaintance with the county agent, compared with 10 per cent of those in the higher income group. It seems reasonable that the 10 per cent in the higher income group did not need to rely on help from the county agent as much as did lower income farmers.

Another indicator of the amount of observation and analysis was frequency of reading farm magazines. It was found that the level of farm income was significantly associated with the frequency of reading farm magazines.

No significant relationship between the level of farm income and keeping farm records was evident from the data. It may be that some kept farm records mainly for convenience in filling out their income tax statements.

The study of farm records was assumed to be a specific indication of managerial analysis. It was found that those who studied farm records generally received a higher income than those who did not. The chi square test showed that at the 95 per cent point there was a significant relationship between the level of farm income and studying farm records.

No significant relationship was found between the level of farm income and studying price outlook information. Eighty-eight per cent in the higher income group and 80 per cent in the lower income group reported studying price outlook information.

Farmers' attitudes toward efficiency and toward the rate of adoption of new farming practices were found to be significantly associated with the level of farm income at the 95 and 90 per cent point respectively.

In both income groups, farm operators' attitudes toward the use of credit were generally favorable. Further, 62 per cent of the lower income farm operators and 65 per cent of the higher income farm operators reported borrowing money in 1960. The money which they reported borrowing was used for current operating purposes in most cases. Among the 76 farm operators who reported borrowing money last year, only nine responded that they could have used more credit if it had been available. The unavailability of credit does not appear to have been a serious impediment to adjustment.

It was found that the size of farm was significantly associated with the level of farm income at the 95 per cent point. Thirty-seven per cent of the farm operators said they felt a shortage of land and reported that they would be better off if more land were available. Furthermore, 62 per cent of the farm operators reported that they could farm more land with their present equipment. Shortage of land and underuse of machinery generally prevailed in both income groups. Only 23 per cent of all respondents reported that they could obtain more land for adjustment. Such evidence revealed that the unavailability of land for adjustment was viewed as a limiting factor by most farm operators.

CHAPTER VIII

RECOMMENDATIONS

This study supports the position of Lee and Chastain with regard to the importance of problem recognition as an explicit step in the decision-making framework. Further, it supports their position that many farm adjustments fail to take place because farm operators do not recognize their problems. Evidently, in programs designed to help increase farm income, more attention should be focused upon improving the ability to recognize problems.

It was found that older farm operators had the most failures in problem recognition. Thus, their farm incomes were relatively depressed because of failures in this managerial function. At the same time, these older farm operators generally have fewer non-farm opportunities than do younger farm operators. Then if their incomes are to be improved, in most cases this must be accomplished by improving their ability to make farming a profitable undertaking, and much attention should be given to improving their ability to recognize existing problems.

It may be that a considerable increase in the years of formal education will help farm operators improve their ability to recognize their problems. However, the average level of formal education among farm operators is unlikely to change rapidly. Adult education programs, therefore, appear very important to the improvement of problem recognition. It has long been recognized that certain practices can contribute toward higher farm incomes. These practices include keeping and studying farm records, being early adopters of sound, new farming practices, and emphasizing

efficiency in general. Yet, it was found that respondents who had relatively lower incomes were failing in these areas. Many of these same persons had little contact or acquaintance with their county agent. Perhaps adult education programs should emphasize new ways of reaching such persons. In some cases, it may be necessary to take the educational input to the farm.

There was evidence that attitudes toward efficiency and toward the speed of adoption of new farming practices were significantly related to the level of farm income. It would be an easy matter to suggest that those attitudes should be changed. But such attitudes seem unlikely to be capable of rapid change. Their persistence to the present day is suggested as evidence of this point. Here again, a different approach to adult education may be called for. In part, the value systems of some lower income farm operators may not encourage procedures that are related to higher incomes. Some farm operators may not be aware of this. If they were encouraged to state explicitly their long-run income goals, and then were led to examine the means they have developed, they may then recognize that their means are inconsistent with their explicit income goals. They may then feel the need to alter their methods of farming.

One type of adjustment that has been under way in the United States for many years is increasing the acres per farm. In the present study, it was found that farm size was significantly related to the level of farm income. However, only 23 per cent of all respondents reported that they could adjust by obtaining more land. The others believed such land was not available. Evidently, a relatively high price would have to be paid to increase farm size under this condition. Yet, if farm size is

the major limiting factor in many cases, paying a relatively high price may be economically feasible. The data showed that in 1960 very few respondents had borrowed capital on either an intermediate or long-term basis. Unwillingness to borrow on a long-term basis may be a major impediment to the adjustment of farm size in Lake County. Also, it must be recognized that many of those who indicated that they could benefit by increasing the number of acres were failing to obtain a number of efficiencies already available without assuming long-term debts.

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